



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/530,484	09/20/2005	Hiroki Yoshioka	268533US90PCT	5341
22850 7590 07/11/2007 OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER MORILLO, JANELLE COMBS	
			ART UNIT 1742	PAPER NUMBER
			NOTIFICATION DATE 07/11/2007	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com  
oblonpat@oblon.com  
jgardner@oblon.com

<b>Office Action Summary</b>	Application No. 10/530,484	Applicant(s) YOSHIOKA ET AL.	
	Examiner Janelle Combs-Morillo	Art Unit 1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 April 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 9-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2001-107169A (JP'169) or EP 982410 A1 (EP'410) or Hirano (US 6,780,375) in view of "Aluminum and Aluminum Alloys" p 221.

JP'169 teaches an aluminum alloy with free cutting ability, said alloy containing: 5.1-6.0% Cu, 0.1-1.0% Zn, 0.5-1.5% Sn, at least one of 0.05-1.0% Si, 0.001-0.2% In, and 0.001-0.2% Bi (abstract, [0005]), see also JP'169 at Table 1, example 5 and 9), which overlaps, touches the boundary, or falls within the presently claimed ranges of Cu, Zn, Bi, Sn, Si, Mg. JP'169 does not mention adding 3-10 ppm B.

EP'410 teaches an aluminum alloy with good machinability, said alloy containing ranges of Si, Fe, Cu, Sn, Bi, and Zn that fall within the ranges of instant claims 1-7 (see EP'410 at Table 1, example 1). EP'410 does not mention adding 3-10 ppm B.

Hirano teaches an aluminum alloy with good cuttability, and further teaches examples within the presently claimed alloying ranges of Cu, Sn, Bi, Zn, Mg, Fe, Si ranges of claims 1-7 (see Table 1 of Hirano at example 8). Hirano broadly teaches 3-6% Cu, 0.2-1.2% Sn, 0.3-1.5% Bi, 0.5-10% Zn (column 1 lines 42-45), typically 0.17-1.01% Fe (Table 1), typically 0.17-0.76%

Art Unit: 1742

Si (Table 1), which significantly overlaps claimed alloying ranges of Cu, Sn, Bi, Zn, Mg, Fe, Si. Hirano does not mention adding 3-10 ppm B.

The prior art of JP'169 or EP'410 or Hirano do not mention the presence of 3-10 ppm B. However, "Aluminum and Aluminum Alloys" teaches that boron is added to aluminum and its alloys as a grain refiner, at levels  $\leq 0.10\%$  B to effect the grain size of the cast structure (Fig. 46). It would have been obvious to one of ordinary skill in the art to add B to the Al-Cu alloys taught by JP'169 or EP'410 or Hirano because "Aluminum and Aluminum Alloys" teaches that boron is effective in refining the grains of aluminum alloys.

Overlapping ranges have been held to be a prima facie case of obviousness, see MPEP § 2144.05. It would have been obvious to one of ordinary skill in the art to select any portion of the range, including the claimed range, from the broader range disclosed in the prior art, because the prior art finds that said composition in the entire disclosed range has a suitable utility. Additionally, "The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages," *In re Peterson*, 65 USPQ2d at 1379 (CAFC 2003).

3. Claims 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP'169 in view of "Aluminum and Aluminum Alloys" p 221.

JP'169 and "Aluminum and Aluminum Alloys" are discussed in paragraphs above. Concerning claims 9-11, JP'169 teaches said alloy is process by extruding, thereby obtaining excellent machinability when cutting (abstract). Because the combination of JP'169 and "Aluminum and Aluminum Alloys" teaches an alloy processed substantially as presently

Art Unit: 1742

claimed, it is held that JP'169 and "Aluminum and Aluminum Alloys" have created a prima facie case of obviousness of the presently claimed invention.

4. Claims 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirano in view of "Aluminum and Aluminum Alloys" p 221.

Hirano and "Aluminum and Aluminum Alloys" are discussed in paragraphs above. Concerning claims 9-11, Hirano teaches working said Al-Cu alloy by extrusion, and further performing a step of cutting (example 1, column 4). Because the combination of Hirano and "Aluminum and Aluminum Alloys" teaches an alloy processed substantially as presently claimed, it is held that Hirano and "Aluminum and Aluminum Alloys" have created a prima facie case of obviousness of the presently claimed invention.

5. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP'169 or EP'410 or Hirano (US 6,780,375) combined with "Aluminum and Aluminum Alloys" p 221, and further in view of "ASM Handbook: Vol. 13 Corrosion", p 599-600.

The prior art of JP'169 or EP'410 or Hirano or "Aluminum and Aluminum Alloys" do not mention the coating of an anodic oxide layer on said Al-Cu alloy. However, "ASM Handbook: Vol. 13 Corrosion" teaches anodic coatings are applied to aluminum alloys in order to form a protective barrier with greatly improved protection against corrosive conditions (p 599, 3<sup>rd</sup> column). It would have been obvious to one of ordinary skill in the art to form an anodic oxide layer on the Al-Cu alloys taught by (JP'169 or EP'410 or Hirano) and "Aluminum and Aluminum Alloys", because "ASM Handbook: Vol. 13 Corrosion" teaches anodic coatings are applied to aluminum alloys in order to form a protective barrier with greatly improved protection against corrosive conditions (p 599, 3<sup>rd</sup> column).

***Response to Amendment***

6. In the response filed on April 10, 2007 applicant amended claims 1-3 and 9 and canceled claim 8. The examiner agrees that no new matter has been added.

7. Applicant's argument that the present invention is allowable over the prior art of record because "Aluminum and Aluminum Alloys" p 41 does not teach the presently claimed range of B has been partially persuasive. The examiner's discussion of "Aluminum and Aluminum Alloys" referred to Fig. 46 which is on p 221 of "Aluminum and Aluminum Alloys" (while the heading refers to p 41 which was inadvertently supplied to applicant). Said Figure 46 does teach a broadly overlapping range of B provides a (albeit small) grain refining effect (see rejection above).

Though "Aluminum and Aluminum Alloys" p 41 teaches a preferable range of B added to aluminum alloys of  $\geq 50$ ppm, a reference disclosure must be evaluated for all that it fairly suggests and not only for what is indicated as preferred, *In re Boe*, 53 CCPA 1079, 335 F.2d 961, 148 USPQ 507 (1966), see also MPEP 2123. "The use of patents as references is not limited to what the patentees describe as their own inventions or to the problems with which they are concerned. They are part of the literature of the art, relevant for all they contain." *In re Heck*, 699 F.2d 1331, 1332-33, 216 USPQ 1038, 1039 (Fed. Cir. 1983) (quoting *In re Lemelson*, 397 F.2d 1006, 1009, 158 USPQ 275, 277 (CCPA 1968)). A reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill the art, including nonpreferred embodiments. *Merck & Co. v. Biocraft Laboratories*, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), cert. denied, 493 U.S. 975 (1989). See also *Celeritas Technologies Ltd. v. Rockwell International Corp.*, 150 F.3d 1354, 1361, 47 USPQ2d 1516, 1522-23 (Fed. Cir. 1998) (The court

Art Unit: 1742

held that the prior art anticipated the claims even though it taught away from the claimed invention. "The fact that a modem with a single carrier data signal is shown to be less than optimal does not vitiate the fact that it is disclosed.").

8. Applicant has not clearly shown specific unexpected results with respect to the prior art of record or criticality of the instant claimed range (wherein said results must be fully commensurate in scope with the instantly claimed ranges, etc. see MPEP 716.02 d).

### ***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janelle Combs-Morillo whose telephone number is (571) 272-1240. The examiner can normally be reached on 8:30 am- 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
**ROY KING**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 1700**

Application/Control Number: 10/530,484

Page 7

Art Unit: 1742

JCM

June 27, 2007

A handwritten signature in black ink, appearing to be 'JCM', written over the printed name 'JCM'.